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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 September 2010</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17 and 19-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) <u>17,19-21 and 41</u> is/are allowed.

6)☒ Claim(s) <u>1-16 and 22-40</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to request for reconsideration filed September 8, 2010.

2.   Claims 1-41 are pending. Claims 1, 9, 17, 22, 27, 30, 33, 37 and 41 are independent claims.

Response to Amendments

3.   Per Applicant's request, claims 17 and 19-20 have been amended and fully considered. Claims 17 and 19-21 are thus allowed for the reasons indicated in the section "Allowable Subject Matter" hereinbelow.

Response to Arguments

4.   Applicant's arguments with respect to Claims 1-16 and 22-40 have been fully considered but are not persuasive. The following is an examiner's response to Applicant's arguments.

Rejection under 35 U.S.C. § 102(a) based on QUIGLEY et al.

Independent claims 1, 9, 27, 30, 33 and 37

Applicant's essential arguments:

Applicant submitted that none of the Quigley's Figures cited by the Office teaches or suggest *setting the modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on the monitored quality* because:

in FIG. 27, Quigley discloses that, when a quality of a channel is determined to be less than that of a predetermined threshold, a second modulation method, which uses a lower data rate than a first modulation rate, is utilized (paragraph 0321); Applicant submits that using a second modulation method does not correspond to transmitting on a second different upstream channel based on a monitored quality of a first upstream channel;

in FIG. 31, Quigley discloses that the use of fine frequency agility facilitates the precise definition of upstream channels so that usable upstream bandwidth is enhanced (paragraph 0355); hence, Quigley does not disclose or suggest transmitting on a second different upstream channel based on a monitored quality of a first upstream channel;

in FIG. 32, Quigley discloses that, when a signal-to-noise ration is less than a predetermined threshold, then the symbol rate and constellation for a new, unused upstream channel is determined and a channel reallocation message is sent to all cable modems (CMs) in the frequency channel (paragraph 0366); hence, Quigley does not suggest setting a modem to transmit on a second different upstream channel on a second different frequency;

in FIG. 33, Quigley discloses that, if a signal-to-noise is not greater than a QPSK threshold, then the next available channel is assigned as the new channel for upstream transmission (par 0373); hence, Quigley does not disclose or suggest setting a modem to transmit on a second different upstream channel on a second different frequency;

in paragraph 0340, Quigley discloses that, when the quality of a channel is determined to be sufficiently poor (such that even QPSK will not provide reliable data transmission), then that channel may be moved to a different frequency allocation; and when this occurs, the new upstream channel is transmitted to the upstream burst receiver and is also transmitted to the affected cable modem via downstream message flow; Applicant appears to admit that Quigley does disclose changing a frequency allocation of a channel (see Remarks, p.15, 2nd paragraph) while submitting that Quigley does not disclose or suggest setting a modem to transmit on a second different upstream channel.

Examiner's response:

It is respectfully noted that Applicant appears to admit that Quigley at least suggests setting the modem to a second different frequency (see Remarks, p.15, 2nd paragraph).

It is further respectfully noted that Applicant also submits that in FIG. 32 and paragraph [0366], Quigley suggests that unused upstream channel is determined and a channel reallocation message is sent to all cable modems in the frequency channel (sse Applicant's Remarks p. 14., 2nd paragraph and in FIG. 33 and paragraph [0373], Quigley suggests a next available channel is assigned as the new channel for upstream transmission (see Remarks, p. 14, 3rd paragraph).

Therefore, it is clearly suggested that Quigley does meet the instant claim requirements of *setting the modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on the monitored quality.*

Claims 2-8, 10-16, 28-29, 31-32, 34-36 and 38-40

Examiner's response: since the incorporated features of the respective base claims are not deemed allowable as discussed above, these dependent claims are not considered allowable for the additional reasons that the particular features of these dependent claims are either anticipated or obvious over the art of record (see Office action herein).

Rejection under 35 U.S.C. § 103(a) based on QUIGLEY et al. and ODMAN et al.

See Allowable Subject Matter hereinafter.

Rejection under 35 U.S.C. § 103(a) based on QUIGLEY et al. ("Quigley") and MILLET et al. ("Millet")

<u>Claim 22</u>

<u>Applicant's essential arguments</u>:

Applicant submits that neither Quigley nor Millet discloses or suggests *instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to a second different time division multiplexed timeslot size, when the monitored quality meets a specified criteria.*

<u>Examiner's response</u>:

It is respectfully noted that Millet 12:5-12 does specifically indicate that if the signal quality of the upstream band being used by the selected modem is less than the threshold (i.e., its signal quality is not acceptable), control returns to step 406 where the MAC layer assigns another **time slot** to the selected modem. It is also noted that at 11:44-52. Millet indicates that time division multiplexing scheme is well known to a person of ordinary skill in the field of cable modem networks (see 11:50-52). Thus, it appears that Quigley in view of Millet does meet the requirements of claim 22.

Claims 23-26

Examiner's response: since the incorporated features of base claim 22 are not deemed allowable as discussed above, the dependent claims 23-26 are not considered allowable for the additional reasons that the particular features of these dependent claims are obvious over the art of record (see Office action herein).

According to the foregoing discussion, the rejections of claims 1-16 and 22-40 are considered still proper and maintained.

Claim Rejections – 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejection under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or foreign country, before the invention thereof by the applicant for patent.

6.   Claims 1-16 and 27-40 are rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent Application Publication No. 2001/0055319 by Quigley et al. ("Quigley").

It should be noted that hereinafter the use of the clause "see at least" should be interpreted that the cited portions that follow the clause are not the only portions or descriptions of embodiments that are considered to be relevant. Should Applicant find that the cited portions are not relevant, other portions of the disclosure of the prior art reference will be provided as additional evidence and/or context to the relevancy of the previously cited portions. Since the evidence is from the same reference or same invention, the introduction of the additional evidence in response to Applicant's arguments should not therefore be considered to be that of new grounds of rejection.

Claim 1

Quigley discloses at least:

> *setting a modem to transmit on a first upstream channel on a first frequency using first transmission characteristics* (see at least FIGs. 27, 29; e.g., downstream message flow from the CMTS allocates upstream channel frequency and indicates modulation method, etc. for each cable modem--CM; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]);

> *monitoring a quality of upstream transmission from the modem on the first upstream channel* (see at least [0013]; FIGs. 27, 29, 31-33).

> *setting the modem to transmit on a second different upstream channel on a second different frequency using second transmission characteristics based on the monitored quality* (see at least 27, 29, 31-33; e.g., [0340]).

Claim 9

Quigley discloses at least *a cable modem termination system* (see at least FIGs. 2, 79; e.g., CMTS Line Card), *comprising:*

> *a memory to store instructions* (see at least FIGs. 2, 79; e.g., CMTS Line Card, it is noted that without a memory to store instructions, the CMTS Line Card would be inoperative);

> *a communication interface* (see at least FIG. 41, Data Interface Ethernet or Internet) *to:*

> *receive transmissions comprising first transmission characteristics from a modem on a first upstream channel on a first frequency* (see at least FIGs. 27, 29; e.g., downstream message

flow from the CMTS allocates upstream channel frequency and indicates modulation method, etc. for each cable modem--CM; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing— FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]), *and*

measure a quality of the received upstream transmissions from the modem (see at least [0013]; FIGs. 27, 29, 31-33)*; and*

a processor to execute the instructions in the memory (see at least FIGs. 2, 79; e.g., CMTS Line Card, it is noted that without a CPU to execute the instructions stored in a memory, the CMTS Line Card would be inoperative) *to:*

monitor the measured quality of the received transmissions (see at least [0013]; FIGs. 27, 29, 31-33).

send a message, via the communication interface, instructing the modem to transmit on second different upstream channel on a second different frequency using second transmission characteristics based on the monitored quality (see at least [0013]; FIGs. 27, 29, 31-33; [0340]).

Claim 27

Quigley discloses *a method of changing transmission characteristics at a modem in a cable modem system, comprising:*

transmitting, by the modem, on a first channel on a first frequency (see at least FIGs. 27, 29; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the

CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]);

receiving, by the modem, a command to select different upstream transmission characteristics (see at least FIGs. 27, 29; e.g., downstream message flow from the CMTS allocates upstream channel frequency and indicates modulation method, etc. for each cable modem--CM; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]);

selecting, by the modem, the different upstream transmission characteristics in accordance with the command (see at least FIGs. 27, 29; e.g., downstream message flow from the CMTS allocates upstream channel frequency and indicates modulation method, etc. for each cable modem--CM; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]).

transmitting, by the modem, on a second different upstream channel on a second different frequency using different upstream transmission characteristics (see at least 27, 29, 31-33; e.g., [0340]).

Claim 30

Quigley discloses at least *a cable modem* (see at least FIG. 2, device 12).

Although, Mahesh does not explicitly show:

a memory to store instructions;

> *a communication interface to receive an instruction to select different upstream transmission characteristics; and*

> *a processing unit.*

However, these devices are deemed inherent to Quigley and well-known in the art (see FIG. 3 - Prior Art - of U.S. Patent No. 6,898,755 to Hou, same assignee with the instant application; it should be noted that Hou is not applied as a secondary art of record but is merely used to show that the claimed features are admitted by applicant to be known in the art). Without these components, the cable modems of Quigley are inoperative.

Quigley further discloses the processing unit of the cable modem to:

transmit on a first upstream channel on a first frequency (see at least FIGs. 27, 29; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]),

select the different upstream transmission characteristics in accordance with the instruction (see at least FIGs. 27, 29; e.g., downstream message flow from the CMTS allocates upstream channel frequency and indicates modulation method, etc. for each cable modem--CM; FIG. 26 shows demodulators 700a-700n at the CMTS and [0318] indicates that the CMs associated with each demodulator 700a-700n are distinguished from those associated with a different demodulator via frequency division multiplexing—FDM—thus, this implies that the CMTS allocates different transmission frequency to different upstream channels via which the modems communicate with the CMTS; FIG. 31; [0133-0134]).

initiate transmission on a second different upstream channel on a second different frequency using different upstream transmission characteristics (see at least 27, 29, 31-33; e.g., [0340]).

Claim 33

Quigley discloses at least *a method of changing virtual upstream channels in a*

cable modem system, comprising:

monitoring upstream signal qualities associated with one or more cable modems (see at

least FIGs. 27, 29).

selectively switching at least one of the one or more cable modems between different

virtual upstream channels with different frequencies based on the signal quality monitoring (see

at least FIGs. 27, 29, 31-33; [0340]).

Claim 37

Quigley discloses at least *a cable modem termination system* (see at least FIGs. 2, 79;

e.g., CMTS Line Card), *comprising:*

a memory to store instructions (see at least FIGs. 2, 79; e.g., CMTS Line Card, it is noted

that without a memory to store instructions, the CMTS Line Card would be inoperative)*;*

a communication interface (see at least FIG. 41, Data Interface Ethernet or Internet) *to:*

> *measure signal qualities of upstream transmissions associated with one or*
> *more cable modems* (see at least [0013]; FIGs. 27, 29, 31-33)*; and*

a processor to execute the instructions in the memory (see at least FIGs. 2, 79; e.g.,

CMTS Line Card, it is noted that without a CPU to execute the instructions stored in a memory,

the CMTS Line Card would be inoperative) *to:*

> *monitor the measured quality of the received transmissions* (see at least
> [0013]; FIGs. 27, 29, 31-33).

> *selectively command at least one of the one or more cable modems to*
> *transmit on different virtual upstream channels on different frequencies based on*
> *the signal quality monitoring* (see at least [0013]; FIGs. 27, 29, 31-33; [0340]).

Claims 2 and 10

The rejection of the respective base claim is incorporated. Quigley further discloses:

determining whether the quality of the modem upstream transmission is inadequate (see at least FIGs. 27, 29, 31-33)*; and*

setting the second transmission characteristics to more robust transmission characteristics based on the determination (see at least FIGs. 27, 29, 31-33; [0312]; [0339-0340]; [0348]).

Claims 3 and 11

The rejection of the respective base claim is incorporated. Quigley further discloses:

determining whether the quality of the modem upstream transmissions is greater than a threshold (see at least [0015]; FIGs. 27, 29, 31-33; [0313-0314]); and

setting the second transmission characteristics to better performing transmission characteristics based on the determination (see at least FIGs. 27, 29, 31-33; [0312]; [0339-0340]; [0348]).

Claims 4 and 12

Rejections of the respective base claim and intervening claim are incorporated. Quigley further discloses *where the first transmission characteristics comprise one of 16 quadrature amplitude modulation (16QAM), 8QAM, 32QAM and 64 QAM, and the second transmission characteristics comprise quadrature phase shift keying (QPSK) modulation* (see at least [0321]; [0332-0333]; [0337]; [0340]; [0343-0345]; [0350]).

Claims 5, 13, 35, 36, 39 and 40

Rejections of the respective base claim and intervening claim are incorporated. Quigley further discloses *where the first transmission characteristics comprise quadrature phase shift keying (QPSK) modulation and the second transmission characteristics comprise at least one of 16 quadrature amplitude modulation (16QAM), 8QAM, 32QAM and 64QAM* (see at least [0321]; [0332-0333]; [0337]; [0340]; [0343-0345]; [0350]).

Claims 6 and 14

The rejection of the respective base claim is incorporated. Quigley further discloses *where the first upstream channel comprises a first time division of a first frequency* (see at least [0318]; [0114]; [0121-0124]; [0133-0134]; [0332]).

Claims 7 and 15

Rejections of the respective base claim and intervening claim are incorporated.   Quigley further discloses *where the second upstream channel comprises a second time division of the first frequency* (see at least [0318]; [0340]; [0348]; [0353][0114]; [0121-0124]; [0133-0134]; [0332]).

Claims 8 and 16

The rejection of the respective base claim is incorporated.   Quigley further discloses *where the quality comprises at least one of bit-error-rate and signal-to-noise ration* (see at least [0321]; [0324-0328]; [0333-0338]).

Claims 28, 31, 34 and 38

The rejection of the base claim is incorporated. Quigley further discloses *receiving a plurality of messages, each message describing different transmission characteristics* (see at least FIGs. 27, 29, 32-33; e.g., downstream message flow—flow implies more than one message,

which is consistent with the monitoring process and dynamic channel allocation control flow, FIGs. 32-33).

Claims 29 and 32

The rejection of the base claim is incorporated. Quigley further discloses *where the command indicates the use of one of the plurality of messages for selecting different upstream transmission characteristics* (see at least FIGs. 27, 29, 32-33; e.g., downstream message flow— flow implies more than one message, which is consistent with the monitoring process and dynamic channel allocation control flow, FIGs. 32-33).

7.   Claims 22-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over .S. Patent Application Publication No. 2001/0055319 by Quigley et al. ("Quigley") in view of U.S. Patent No. 7,039,939 to Millet et al. ("Millet").

Claim 22

Quigley discloses at least *a cable modem termination system* (see at least FIGs. 2, 79; e.g., CMTS Line Card), *comprising:*

a memory to store instructions (see at least FIGs. 2, 79; e.g., CMTS Line Card, it is noted that without a memory to store instructions, the CMTS Line Card would be inoperative)*; and*

a processor to execute the executions in the memory (see at least FIGs. 2, 79; e.g., CMTS Line Card, it is noted that without a CPU to execute the instructions stored in a memory, the CMTS Line Card would be inoperative).

Quigley does not specifically disclose the remaining features of the claim.

However, in an analogous art, Millet discloses:

> *instruct at least one of the one or more cable modems to change its transmission characteristics, including changing from a first time division multiplexed timeslot size to*

a second different time division multiplexed timeslot size, when the monitored quality meets a specified criteria (see at least 11:17 - 12:35 and FIG. 7 and 14:67-15:51; in FIG. 7, lines 716 and 718 represent the time slot described in the MAP messages sent to the modems; as can be seen in the figure, the size or length of time slot represented by line 716 is different than that of the time slot represented by line 718).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Millet in combination with Quigley because the use of Millet would improve the quality of received upstream data at the headend and optimize the use of cable modem bandwidth in Quigley.

Claim 23

The rejection of base claim 17 is incorporated. Quigley-Millet further discloses *commanding the at least one of the one or more cable modems to transmit on a different upstream virtual channel when the monitored quality meets the specified criteria* (see at least FIGs. 27, 29, 31-33; [0312]; [0339-0340]; [0348]).

Claim 24

The rejection of base claim 17 is incorporated. Quigley-Millet further discloses *where commanding at least one of the one or more modems to change its transmission characteristics comprises:*

commanding the at least one of the one or more modems to change its modulation when the monitored quality meets the specified criteria (Quigley; see at least FIGs. 27, 29, 31-33; [0312]; [0339-0340]; [0348]).

Claim 25

The rejections of the respective base claim and intervening claim are incorporated. Quigley-Millet further discloses *commanding the at least one of the one or more modems to change from quadrature phase shift keying (QPSK) modulation to at least one of 16 quadrature amplitude modulation (16QAM), 8 QAM, 32QAM and 64QAM* (Quigley; see at least [0321]; [0332-0333]; [0337]; [0340]; [0343-0345]; [0350]).

Claim 26

The rejection of the respective base claim is incorporated. Quigley-Millet further discloses *where the quality comprises at least one of bit-error-rate and signal-to-noise ration* (Quigley; see at least [0321]; [0324-0328]; [0333-0338]).

Allowable Subject Matter

8.   Claims 17, 19-21 and 41 are allowed.

9.   The prior art references of record fail to teach or suggest the following features, when these features are taken in combination with the remaining features of the respective base claim:

> *commanding, based on the monitored upstream transmission quality, at least one of the one or more cable modems to change associated transmission characteristics by selecting a different upstream channel descriptor of the plurality of channel descriptors, where changing the associated transmission characteristics includes transmitting on a different upstream virtual channel and changing from a first preamble length to a second different preamble length* (claim 17);

> *means for commanding at least one of the one or more cable modems to change its transmission characteristics, including changing from a first data block size to a second different data block size, based on the sent upstream channel descriptor and the monitored quality* (claim 41);

Conclusion

10.   **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu "Antony" Nguyen-Ba whose telephone number is (571) 272-3701. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:30 pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, John Miller can be reached at (571) 272-7353.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2400 Group receptionist (571) 272-2400.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/Hoang-Vu Antony Nguyen-Ba/

Primary Examiner, Art Unit 2421

November 20, 2010